Disruption Tolerant Networking

Robert C. Durst

703-983-7535 • durst@mitre.org

DARPA Strategic Technology Office (STO)

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Report Documentation Page

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Problem

- Network-centric warfare depends heavily on Internet protocols
  - These work well with short delays, low error rates, and continuous connectivity
  - Military environments can have disrupted connectivity, long/variable delays, high error rates, extreme heterogeneity
- How to design a communications architecture that spans “connected” and “disrupted” environments, working well in both

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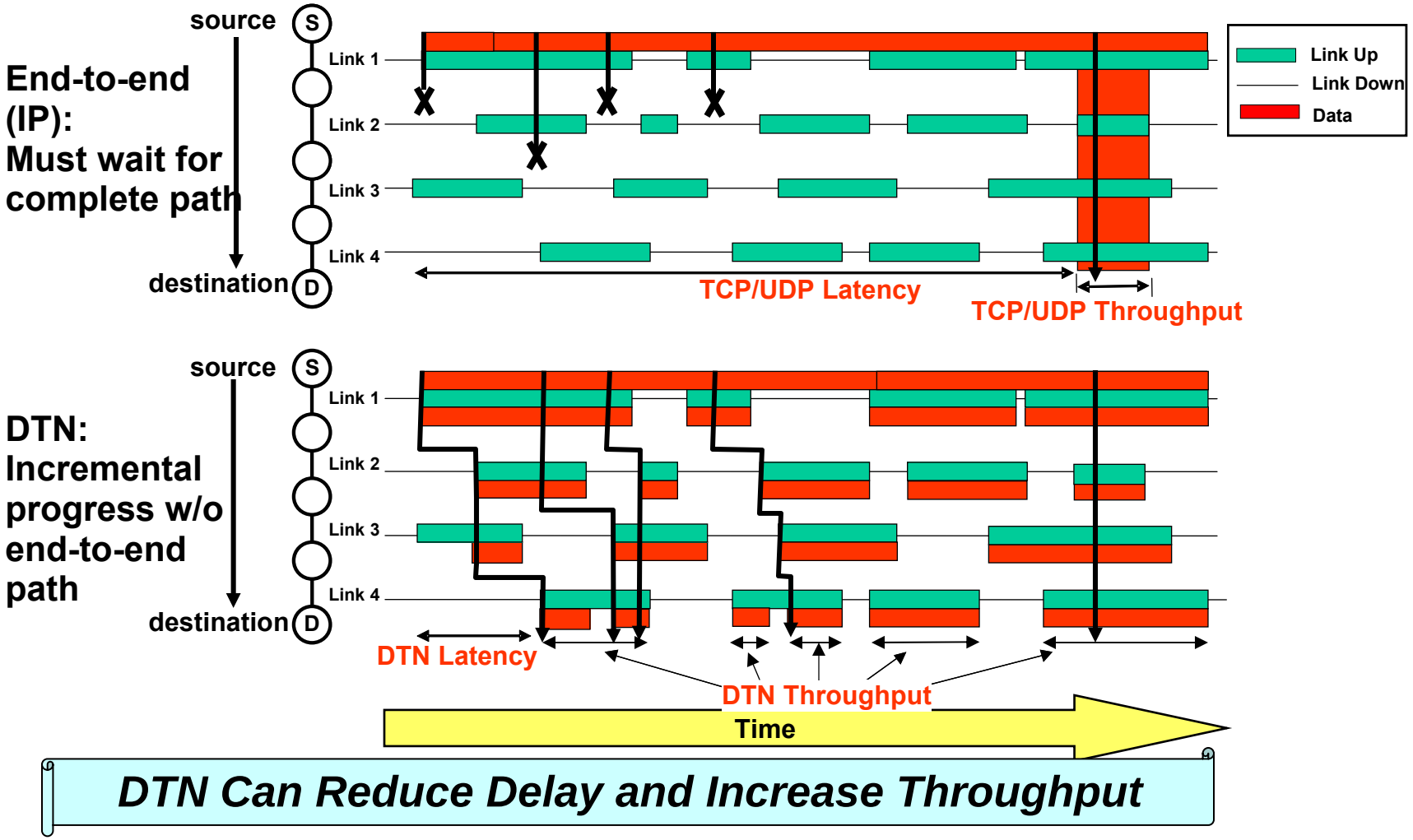
Background



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Objective

- Design a secure and robust Disruption Tolerant Networking (DTN) architecture and protocols to support networking in extreme environments
- Mature specifications toward RFC status
- Enhance protocols for military applications
- Foster early adoption by services
- Integrate with tactical systems and applications

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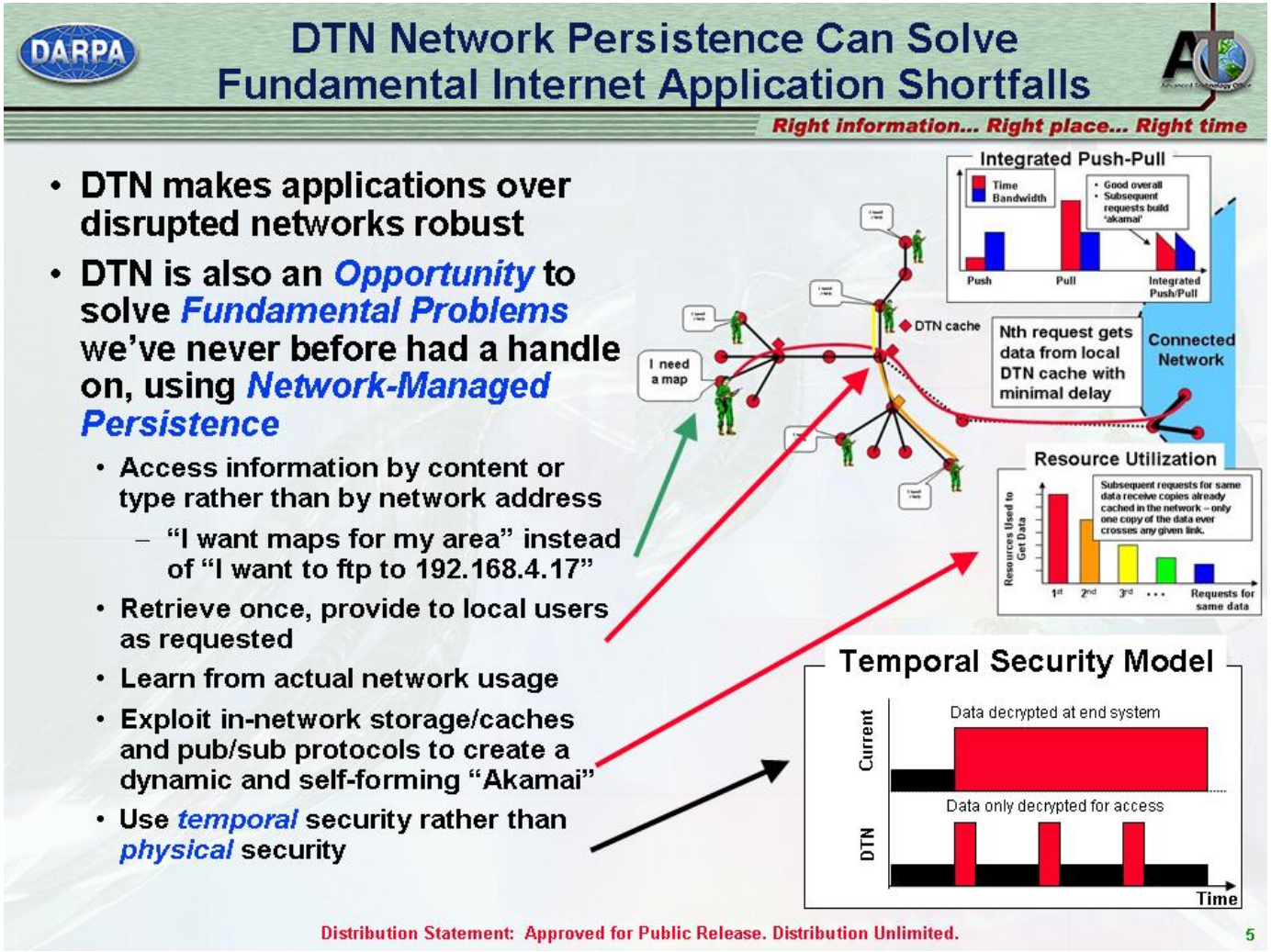
Activities



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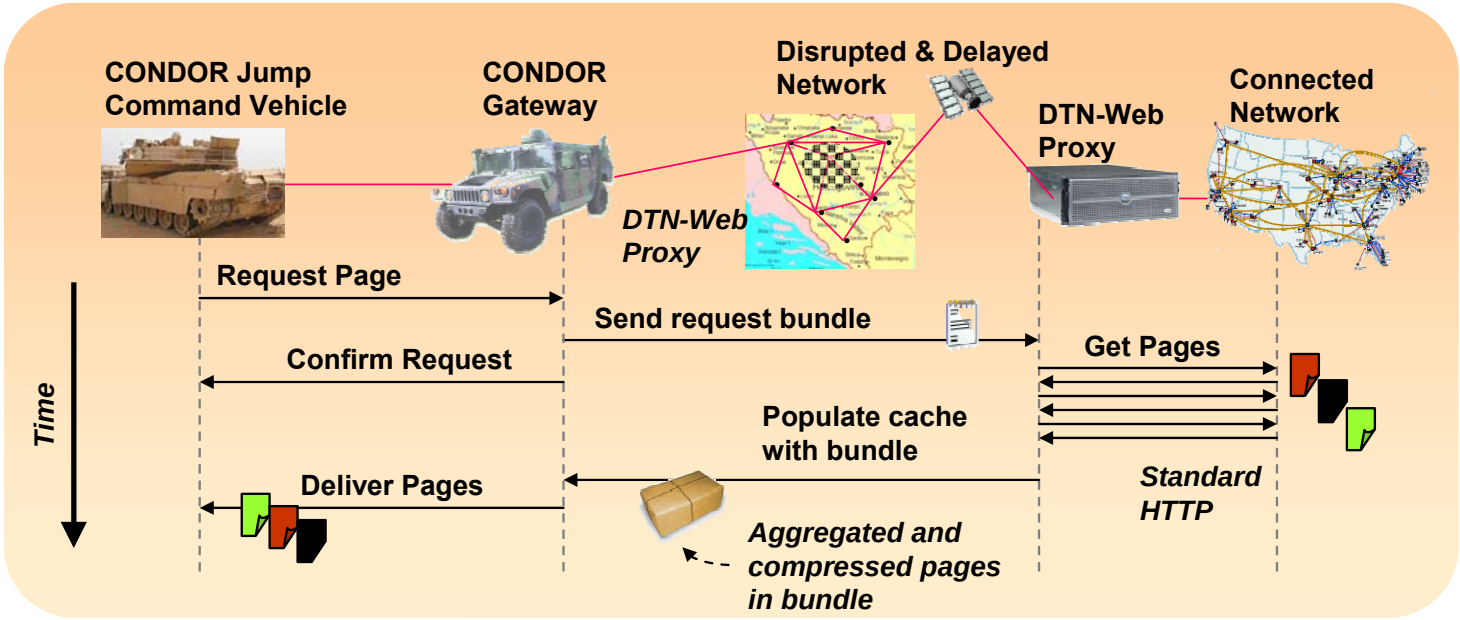
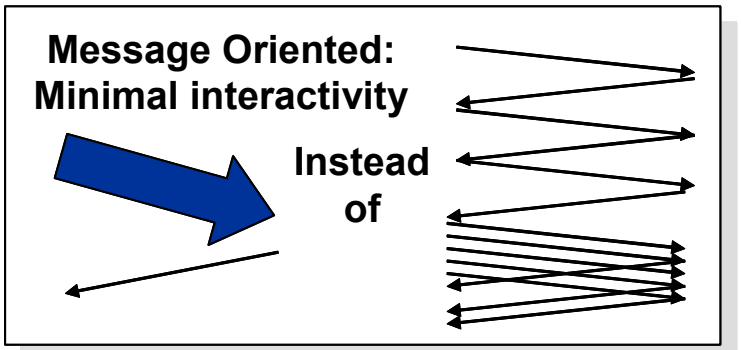
Highlight: DTN-Web Proxy



- Routing Across Network Disruption Using
  - On-demand connections
  - Scheduled connections
  - Predicted connections
  - Opportunistic (unexpected) connections



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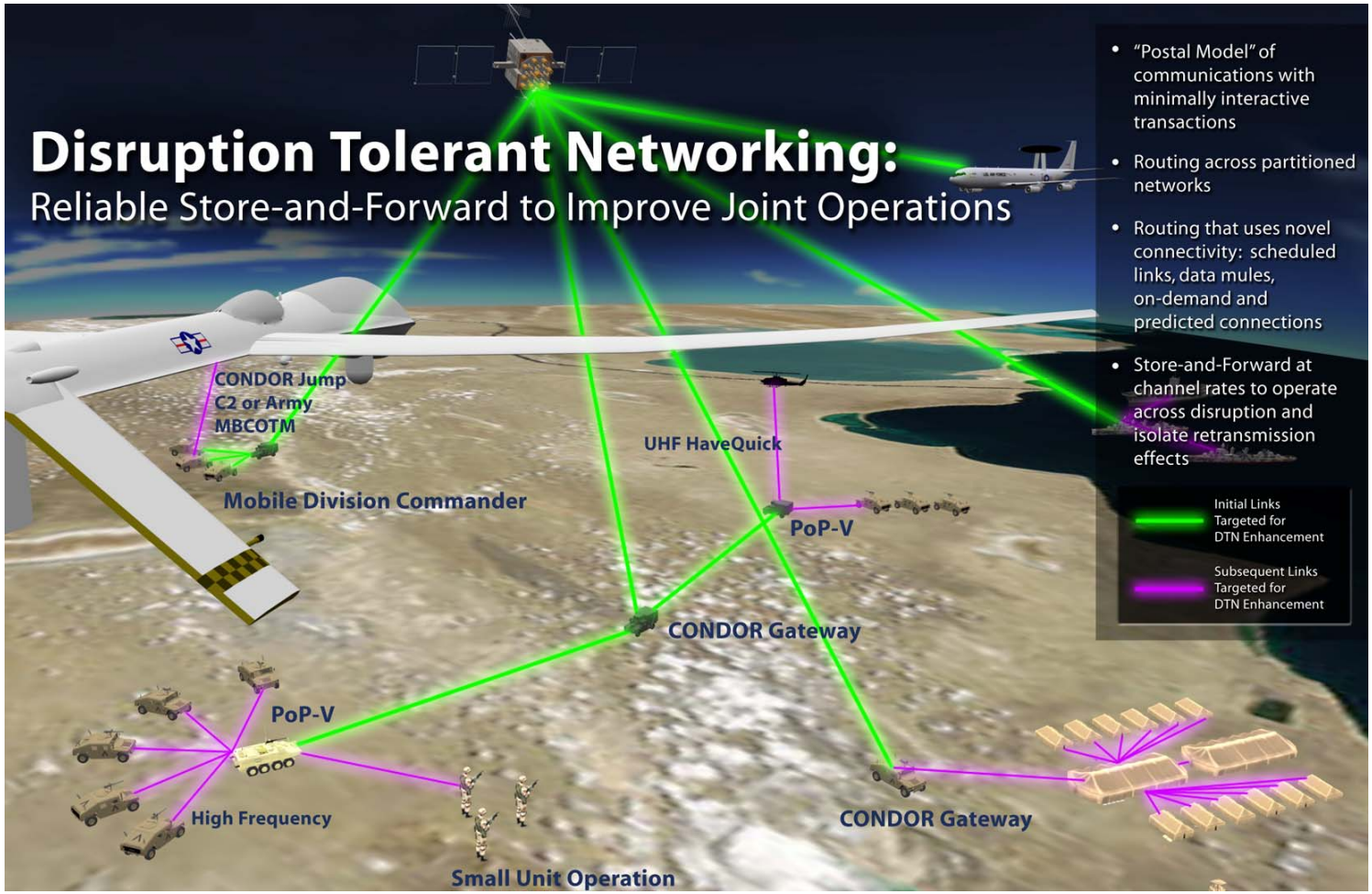
Highlight: DTN-for-CONDOR



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Impacts

- Enable the vision for secure and reliable communications for “distributed ops”
- Provide support for *practical* mobile ad hoc networks in tactical environments
- Improve network and application performance in disrupted tactical environments
  - Higher throughput and utilization over challenged connections
  - Connectivity to lower echelons using tactical radios

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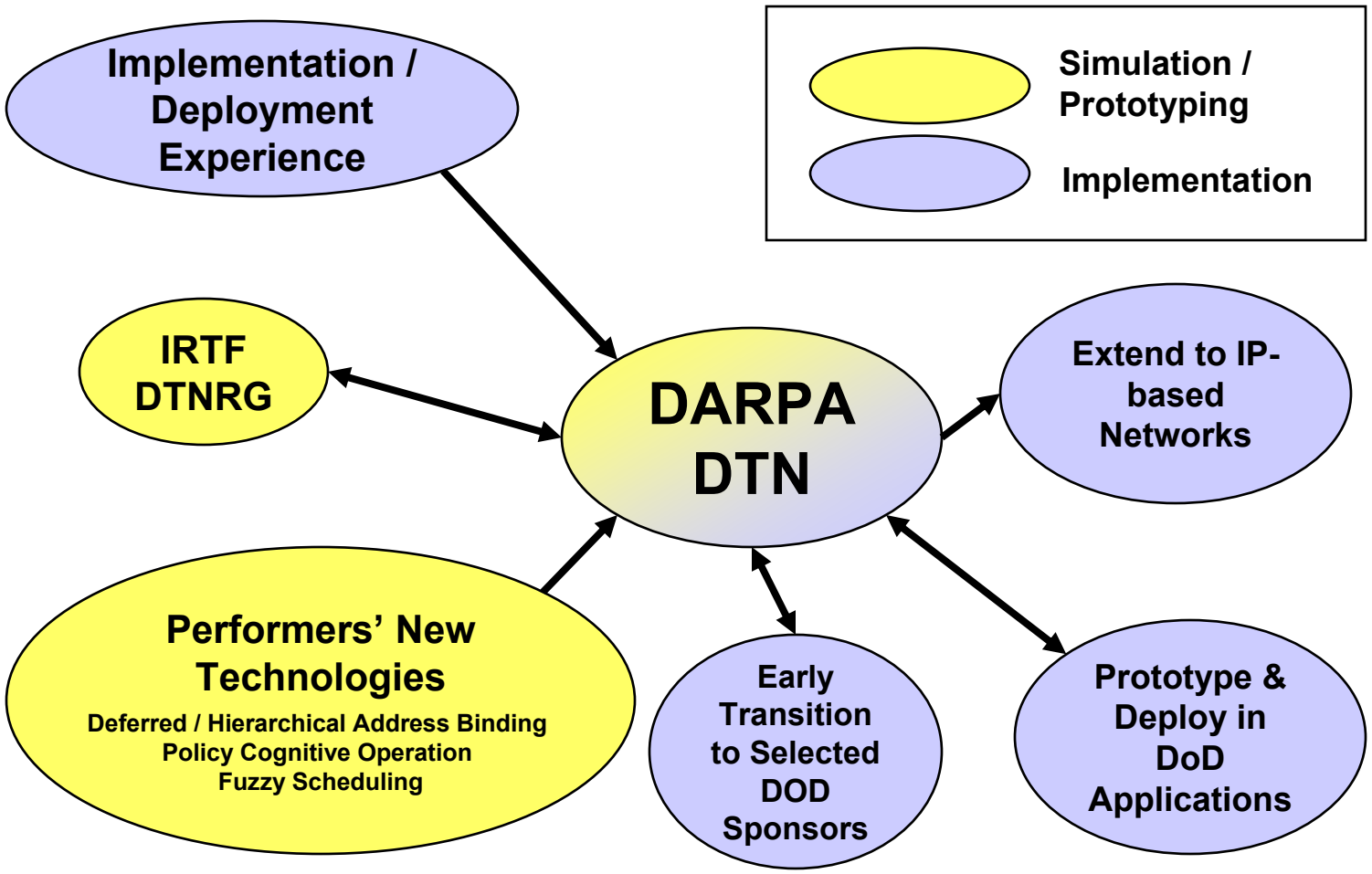
Future Plans



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